

DE VRIES, HUGO.

1911. *Über doppeltreciproke Bastarde von Oenothera biennis L. und O. muricata L.* Biol. Centralbl. **31**: 97-104.
 1918. *Mass-mutations and twin hybrids in Oenothera grandiflora Ait.* Bot. Gaz. **65**: 377-422.
 1919. *Oenothera rubrinervis, a half mutant.* Bot. Gaz. **67**: 1-26.

BOTANY.—*New plants from Central and South America.* S. F. BLAKE, Bureau of Plant Industry.

The new species here described, belonging to several families of Dicotyledones, have been found in the course of herbarium work during the past few years. In most cases the new species have been worked out in connection with the preparation of preliminary keys to the groups concerned.

Urtica granulosa Blake, sp. nov. Monoecious herb; stem densely incurved-puberulous, sparsely hispid; petioles slender; lower leaf blades broadly cordate-ovate, the middle and upper lanceolate, acuminate, coarsely toothed, incurved-pubescent, paler green but not canescent beneath; staminate spikes simple, about 3.5 cm. long; pistillate spikes mostly simple, 3 cm. long or less; pistillate perianth 1.8 mm. long, hispidulous, barely surpassing the ovate, whitish, granulose achene.

Stem simple, slender, probably tall, sulcate-quadrangular, densely but not canescently puberulous with incurved-ascending hairs and sparsely stimulo-hispid with spreading hairs; internodes (upper and middle) mostly 1.5-3.5 cm. long; leaves opposite; stipules linear-lanceolate, acute, puberulous, 6-8 mm. long; petioles 1-5.2 cm. long, pubescent like the stem; lower leaf blades 9.5 cm. long, 6.2 cm. wide, acute, coarsely and simply dentate (teeth about 19 pairs, deltoid, acute, about 5 mm. long), membranaceous, deep green; middle and upper leaves lanceolate, 6-11.5 cm. long, 2.5-4.5 cm. wide, often falcate, cuneate to truncate or subcordate at the often unequal base, coarsely toothed (teeth 12-21 pairs, sometimes with a lateral tooth, acute to obtuse, the terminal one elongate), above deep green, rather densely pubescent with mostly incurved hairs and sparsely hispid, beneath paler green, evenly and rather densely puberulous and sparsely hispid, 3 or 5-plinerved from near the base; axils (on upper part of plant) all floriferous, the staminate spikes below, densely flowered, 1.8-3.5 cm. long, the pistillate above, 0.5-3 cm. long, densely flowered, all hispidulous-puberulous and sparsely hispid; staminate calyx hispidulous, 1.8 mm. thick in bud; inner sepals of the pistillate calyx oval, obtuse; achene obtuse or acutish, marginate, 1.4 mm. long, 1 mm. wide.

CHIHUAHUA: In shade of cliffs, canyon below Cusihiuriachic, September 21, 1888, *Pringle* 2005 (type no. 1,167,407, U. S. Nat. Herb.); Pilaes, September 22, 1891, *C. V. Hartman* 748.

Distributed as *Urtica breweri* S. Wats., which has most of the leaves broadly ovate and sepals twice as long as the achene. In leaf outline and general appearance *U. granulosa* is similar to *U. aquatica* Liebm., but in that species the finer hairs of the stem are retrorse, and the pistillate calyx is glabrous. *Urtica mexicana* Blume (not Liebm.) and *U. serra* Blume are identical with *U.*

aquatica. Material of the type collections of all three species was examined by the writer some years ago in European herbaria.

Drymaria cognata Blake, sp. nov. Very slender dichotomous annual, glandular-hirtellous on the upper part of the internodes; leaves opposite, linear, acute, 3-nerved; pedicels glabrous or glandular-hirtellous; sepals lance-elliptic, acuminate, strongly 3-nerved, glabrous, about 4 mm. long; petals and capsule shorter than the sepals.

Densely dichotomous-branched from base, or rarely nearly simple in undeveloped specimens, about 14 cm. high; internodes of the main stem usually 2–4 cm. long; leaves 9–20 mm. long, 0.8–1.5 mm. wide, acute or acuminate, sessile, glabrous, prominulously 3-nerved beneath; stipules of the stem leaves scarious, linear-subulate, entire, 0.6 mm. long; leaves mostly wanting on the branches, replaced by lance-ovate, acuminate, scarious bracts 1.2–2 mm. long, with a green midnerve; flowers solitary in the forks and at apex of branchlets, the pedicels 0.5–2.8 mm. long; sepals 3.5–4.5 mm. long, with green 3-nerved center and subequal scarious margin, 2 somewhat shorter than the other 3; petals 5, white, 3.2 mm. long, linear-oblong, 2-lobed to below the middle; stamens 5, included; ovary subglobose, about 6-ovuled; style equaling ovary, longer than the 3 stigmatic branches; capsule ovoid, obtuse, 2–3 mm. long; seeds somewhat yellowish brown, densely blunt-muriculate, 0.8 mm. long.

DURANGO: City of Durango, April–November 1896, *Palmer* 912 (type no. 304403, U. S. Nat. Herb.)

SAN LUIS POTOSI: Near City of San Luis Potosi, 1879, *Schaffner* 542 in part.

Related to *Drymaria leptophylla* (Schlecht. & Cham.) Fenzl (including *D. gracillima* (Hemsl.) Rose, according to Briquet¹), *D. effusa* A. Gray, and *D. nodosa* Engelm. In *D. nososa* the petals are longer than the sepals; in *D. effusa* the sepals are obtusish and slightly shorter than the petals; and in *D. leptophylla* the stem is glabrous and the sepals only 2–2.8 mm. long. *Palmer* 912, type of the new species, was listed by Rose under *D. gracillima* when the latter was raised to specific rank.

Drymaria peninsularis Blake, sp. nov. Many-stemmed annual, pale green or glaucescent, glandular-hirtellous throughout; leaves opposite, linear, the upper ones reduced to bracts; inflorescences elongate, racemiform; sepals obtuse, glandular-hirtellous, white-margined; seeds fuscous.

Root annual, apparently sometimes persisting and becoming perennial; stems evidently prostrate or ascending, up to 20 cm. long, branched; internodes mostly 1–2 cm. long; stipules scarious, subulate, entire, about 0.6 mm. long; leaves linear, fleshy, obtuse, 1-nerved, sessile, the lower and middle ones 1–2.5 cm. long, 0.8–1.5 mm. wide, the upper linear, 2–4 mm. long, much shorter than the pedicels; stems floriferous from about the middle, the pedicels solitary, axillary, in fruit 4–12 mm. long, erect to deflexed; sepals 5, oval-oblong, obtuse or rounded, green with broad white petaloid margins, obscurely 1 or 3-veined, 2.8–(fruit) 4 mm. long; petals 5, white, oblong-flabellate, contracted at base, 4-fid for nearly half their length (outer lobes oblong or obovate, blunt, the inner shorter and much narrower), 3 mm. long, about equaling the sepals, persistent, slightly exserted in fruit; stamens 5, included, the

¹ Ann. Cons. Jard. Genève 13-14: 375. 1911.

filaments subulate, glabrous, alternating with as many glands and adnate to them at base; ovary globose; style about equaling the 3 stigmatic branches; capsule 3-valved, 3-4 mm. long, equaling the sepals; seeds bluntly muriculate, reniform, 0.9 mm. long.

BAJA CALIFORNIA: Cape region, January-March 1901, *Purpus* 423 (type no. 470422, U. S. Nat. Herb.); coast south of Pescadero, Nov. 1902, *Brandegee*; Cape San Lucas, *Xantus* 5, *Brandegee* 30, *Rose* 16357.

All these specimens have been identified as *Drymaria arenarioides* Willd. In that species, which occurs in Mexico from Chihuahua to Hidalgo, the leaves are shorter and somewhat broader (mostly elliptic or linear-elliptic), the upper ones are not conspicuously reduced, and the mature seeds are much lighter brown.

***Bauhinia eucosma* Blake, sp. nov.** * High-climbing vine, unarmed; branchlets appressed-pubescent; leaves bifoliate, the leaflets semi-ovate, obtuse, pergamentaceous, glabrous and glaucescent above, sparsely appressed-pilose beneath chiefly along the nerves, 5-nerved; racemes pilose; pedicels about 1.5 cm. long; bractlets linear; calyx campanulate, 15-nerved, 2-2.5 cm. long, the teeth subulate, short; petals sericeous, 4 cm. long; perfect stamens 10; pod 10.5 cm. long, about 4-seeded.

Older branches gray-barked, glabrous, the younger brownish-gray; internodes about 1 cm. long or less; petioles slender, glabrous or sparsely hairy, 3 to 6 cm. long; leaves deeply and narrowly cordate, the basal sinus 1 to 2 cm. deep; leaflets 5.3 to 8.8 cm. long, 2.5 to 4.3 cm. wide, broadly rounded at base, erect, somewhat overlapping, deep green above, somewhat glaucescent, brownish beneath, rather coarsely prominulous-reticulate beneath, finely so above; racemes terminal, about 6 cm. long, 6 to 9-flowered, pilose with mostly appressed rufescent hairs; bracts deciduous; pedicels 11 to 16 mm. long, pubescent like the axis, bearing above the middle two linear bractlets about 3 mm. long; calyx thick-ovoid in bud, at maturity campanulate, 5-toothed (teeth pubescent, 2 to 3.5 mm. long), rufidulous-sericeous at base and on the nerves with appressed hairs, rufid-puberulous above between the nerves with appressed hairs; corolla "white;" petals inserted at base of calyx, obovate, densely rufescent-sericeous outside, the claw about 5 mm. long, the lamina rounded at apex, 1.2 to 1.5 cm. wide; stamens 10, all antheriferous, the filaments glabrous, 1.5 cm. long, the anthers hairy, 2.8 mm. long; ovary sessile, not adnate to the calyx, densely rufous-pilose, 6-ovulate, the stigma oblique; pod oblong-obovate, flat, apiculate, sessile, rufid-pilose with appressed hairs, 10.5 cm. long, 3.2 cm. wide.

PANAMA: Along river at the Agricultural Experiment Station, Matías Hernandez, Province of Panama, September 10, 1914, *Pittier* 7682 (type no. 716839, U. S. Nat. Herb.)

A member of the section *Tylotaea*, apparently near *Bauhinia hymeneaeifolia* Triana, which, according to description, has coriaceous leaves, short-pedicelled flowers, ovate-oblong calyx lobes, and only 5 antheriferous stamens. According to Mr. Pittier's notes, the shrub is known as "bejuco de cadena," and the pounded stems yield a good fibre. The dry pods are used by children as windmills, and called "runrun."

***Bauhinia obovata* Blake, sp. nov.** Vine?, unarmed; branchlets puberulous; leaves suborbicular-ovate in outline, bilobate for one-third their length,

9-nerved, thin-coriaceous, glabrous above, rufid-puberulous beneath; racemes dense, rufid-puberulous; bracts obovate, 4 mm. long; bractlets obovate or spatulate; calyx campanulate, about 11 mm. long, 13-nerved, the teeth obovate; petals pilose, 12 mm. long; perfect stamens 10.

Branches slender, angulate, the younger densely and finely rufid-puberulous, the older glabrescent; petioles puberulous, 1.5 to 3.5 cm. long; leaves 4 to 6.5 cm. long, 4 to 8 cm. wide, shallowly cordate at base, above rather pale green, somewhat shining, beneath brownish, densely and finely puberulous with appressed, shining, rufidulous hairs, the primary nerves prominent beneath and the secondaries prominulous, the lobes somewhat incurved, obtusely short-pointed; racemes short-peduncled, rather dense, 8.5 cm. long or less, sometimes with a basal branch, densely rufid-puberulous with mostly appressed hairs; bracts usually deciduous; pedicels mostly 6 to 9 mm. long, bearing above the middle 2 bractlets about 3 mm. long; calyx broadly campanulate, densely rufid-pubescent with appressed hairs, the tube 7 to 8 mm. long, the teeth 5, obovate or spatulate-obovate, obtuse, 3.5 mm. long, 1.5 to 2 mm. wide; petals obovate, rufous-pilose outside, venose, the claw about 4 mm. long, the lamina rounded, about 5 mm. wide; stamens 10, unequal, all antheriferous, the filaments glabrous, the anthers essentially so; ovary sessile, not adnate to the calyx, densely rufous-pilose, 4-ovulate, the stigma small, oblique.

PANAMA: Along the Sambú River, southern Darien, above tide limit, February 1912, *Pittier* 5568 (type no. 715834, U. S. Nat. Herb.)

A species of the section *Tylotaea*, apparently nearest the Brazilian *B. angulosa* Vogel, which is described as having small, narrow, very caducous bracts, small setaceous bractlet, and longer petals (half an inch longer than the calyx).

Stylosanthes linearis Blake, sp. nov. Herbaceous perennial, subsimple, hirsute below; sheaths of the stipules 1-1.6 cm. long, hispid-pilose; leaflets 3, linear, 1.8-3.5 cm. long, 1.5-2 mm. wide, acuminate, hirsute-ciliate; spikes many-flowered, collected in few, remote, subglobose heads about 1 cm. high and 1.5 cm. thick; axis rudiment present; bractlets 2; basal joint of pod minute; terminal joint oblong or oval-oblong, compressed, 4-4.2 mm. long, 2.8-3 mm. wide, 2-nerved and reticulate on each side, pilosulous, the incurved-uncinate beak 1.2-1.5 mm. long.

Several-stemmed; stems rather slender, simple or subsimple below the inflorescence, 60 cm. long, erectish, sparsely hirsute below with spreadingly slightly tuberculate-based yellowish-white hairs about 3 mm. long, glabrous above; middle internodes about 8 cm. long; sheaths of the stipules sparsely hispid-pilose like the stem and sometimes pilosulous when young, the teeth subulate, stiff, 4 mm. long; petioles pilosulous and rarely hirsute, 4 to 7 mm. long, the rachis about 1 mm. long; leaflets short-petiolulate, mucronate, rounded at base, firm, obscurely puberulous along midline above, usually sparsely hirsute-ciliate and sometimes with a few stiff hairs along the costa beneath, strongly 3-nerved to apex, the veins prominent beneath, the secondaries obscure; primary bracts unifoliate, the sheath 3.5 to 4 mm. long, densely pilose-ciliate with whitish hairs, somewhat erect-pilose dorsally, the teeth 2 mm. long, the petiolulate blade linear-subulate, ciliate below, about 3 mm. long; secondary bract 1, linear-lanceolate, ciliate, entire, about 2.5 mm. long; axis rudiment slender-subulate, stiff, long-ciliate, 0.3 to 0.8 mm. long; bractlets 2, similar to the secondary bract but longer, about 3 mm. long;

calyx 6 mm. long (including the 2.8 mm. long, stipe-like base), the lobes ciliate; corolla yellow, the banner about 6 mm. long.

ARGENTINA: Common in "esteras," Las Palmas, Terr. Chaco, 1917, *P. Jørgensen* 2693 (type no. 1,065,486, U. S. Nat. Herb.)

A member of the section *Styposanthes*, nearest *Stylosanthes longiseta* M. Micheli, known to me only from description. In that plant the heads and the upper part of the stem are setose-hispid, the leaflets are oblong (1.2 to 1.4 cm. wide), and the scarcely reticulate fruit is nearly glabrous.

Caperonia angusta Blake, sp. nov. Stem sparsely hirsute-pilose, glabrate; leaf blades linear, acute, serrulate, nearly glabrous, the lateral veins about 8 pairs; flowers short-pedicelled; staminate flowers with 5 equal sepals, 5 subequal petals, and a 3-lobed ovary rudiment; pistillate flowers with 7 or 8 unequal sparsely glandular-ciliate sepals and 5 unequal petals; capsule muricate.

Herb 60 cm. high and more (the base not seen), much branched; stem slender, striatulate, pale green, very sparsely hirsute-pilose with mostly erect or ascending eglandular hairs; main internodes 2.5 to 5 cm. long; stipules ovate, acute, persistent, 1.5 mm. long; petioles sparsely strigillose, 1.5 to 3 mm. long; blades 2.5 to 5.5 cm. long 3 to 5 mm. wide, rounded at base, serrulate with about 8 pairs of small, acute, remote teeth, rather pale green, glabrous above, beneath sparsely strigose on costa and veins or nearly glabrous, featherveined, the lateral veins about 8 pairs, straight, prominulous beneath, the secondaries barely prominulous; peduncles axillary, 5 to 15 mm. long, somewhat hirsute with erect or divergent hairs; racemes 0.8 to 2 cm. long, the lowest flower pistillate, remote from the 8 to 20 staminate flowers; bracts ovate, acute, persistent, 1 mm. long or less; pedicels of the staminate flowers about 0.5 mm. long; sepals 5, equal, ovate, acute, glabrous, 1.5 mm. long; petals 5, subequal, oblong or elliptic-obovate, rounded at apex, 1.2 mm. long; stamens 10, the anther cells subpendulous from the thickened gland-like connective; ovary rudiment distinctly 3-lobed; pedicel of the pistillate flower about 1 mm. long; sepals 7 or 8, unequal, the 3 or 4 largest ovate, acute, 2 to (fruit) 2.8 mm. long, bearing one or two long gland-tipped hairs on each margin and sometimes on the back, the 2 or 3 smallest lanceolate or lance-ovate, about 1 mm. long, the others intermediate in size and shape; petals 5, unequal, white, 1 larger, spatulate-obovate, acute, 3 mm. long, 1.2 mm. wide, the other 4 narrowly oblanceolate, 3 mm. long, 0.8 mm. wide, or sometimes all subequal, oblanceolate-obovate, 3 mm. long, short-pointed; ovary muricate; styles 5 or 6-fid for about three-fourths their length; capsule subglobose, about 3 mm. high, 4 mm. thick, muricate on the upper half, the projections ending in usually gland-tipped hairs.

PANAMA: In a spot subject to inundation, Agricultural Experiment Station, Matías Hernandez, Province of Panama, January 1-15, 1915, *Pittier* 6927 (type no. 716988, U. S. Nat. Herb.)

A member of the section *Eucaperonia*, nearest *C. panamensis* Pax & K. Hoffm., from which it differs in the more numerous sepals of the pistillate flower (5 in *C. panamensis*), these provided with a few gland-tipped cilia, the 3-lobed ovary rudiment, and other features. As the name *C. panamensis* has been used previously by Klotzsch,² the species described as new by Pax and K. Hoffmann³ under this name may be renamed *C. stenomerus*.

² In Seem. Bot. Voy. Herald 103. 1852-57.

³ In Engl. Pflanzenreich, Teil 4, 1477: 424. 1914.

Meliosma idiopoda Blake, sp. nov. Shrub or tree; branches obscurely strigillose, glabrate; petioles short-strigose, about 8 mm. long; leaf blades elliptic or obovate, acuminate at each end, chartaceous, wavy-margined but entire, essentially glabrous, about 18 cm. long; panicles subcylindric or conical, puberulous, 13–21 cm. long, 3.5–8 cm. wide; pedicels 1–1.5 mm. long; sepals somewhat unequal; petals unequal; disk nearly half as long as ovary, bearing several marginal glands.

Branches slender; leaves alternate; petioles naked, slender, 4–10 mm. long; blades falcate-acuminate, long-acuminate to the acute base, 14.5–21 cm. long, 3.8–6.5 cm. wide, obscurely strigillose along costa, densely whitish-papillose beneath, featherveined, the costa and the 8–10 pairs of lateral veins impressed or flattish above, prominent beneath, the loosely reticulate veinlets finely prominulous on both sides; panicles solitary in the axils toward apex of branches, rufig-puberulous with suberect hairs, the peduncle about 3.5 cm. long, the axis 10 to 17 cm. long, the lower branches sometimes 6.5 cm. long and much longer than the other branches, sometimes only 1.5 cm.; sepals 5, the 2 outermost oval-ovate or suborbicular-ovate, acutish to obtuse, glandular-ciliolate, otherwise glabrous, the 3 inner somewhat larger, suborbicular, rounded, glandular-ciliolate, 1.5 mm. long and wide; petals 5, unequal, 2 of the outer suborbicular, obscurely ciliolate-erose, otherwise glabrous, about 1.3 mm. long, 1.8 mm. wide, the other outer one as long but 2.5–2.8 mm. wide, the 2 inner (opposite the perfect stamens and adnate to their filaments at base) cuneate-oblong, 0.8 mm. long, broadly bifid, the teeth ciliolate; stamens 5, 3 sterile (the one adnate to the broadest petal with 2 large empty cells, the 2 adnate to the 2 other broad petals with 1 large empty cell), 2 fertile and with longitudinally dehiscent anthers; disk closely girdling ovary, bearing about 5 glandular teeth; ovary sparsely pubescent at apex, 2-celled, the cells 2-ovuled, the ovules superposed; style glabrous, entire, slightly shorter than ovary; stigmas connate.

COSTA RICA: Forests of Las Vueltas, Tucurrique, altitude 635–700 meters, May 1899, *Tonduz* 13372 (type no. 861231, U. S. Nat. Herb.)

Related to *Meliosma glabrata* (Liebm.) Urban and *M. tonduzii* Donn. Smith, both Costa Rican. Both species, according to description, are at once distinguished from *M. idiopoda* by having the style about twice as long as the ovary, in addition to various other differences.

Hypericum galinum Blake, nom. nov.

Hypericum denticulatum H. B. K. Nov. Gen. & Sp. 5: 191. pl. 458. 1821.

Not *H. denticulatum* Walt. 1788.

* *Hypericum denticulatum* Walt. (Fl. Carol. 190. 1788) is the tenable name⁴ for the plant usually known as *H. virgatum* Lam., and the homonymous Mexican species must consequently be renamed.

Vaccinium dasygynum Blake, sp. nov. Low shrub, very leafy; branches densely griseous-pilosulous with mostly spreading hairs; leaves petioled, ovate to ovate-elliptic, 9–15 mm. long, crenate-serrulate, coriaceous, obscurely pubescent; racemes short, in the uppermost axils; flowers 4 or 5-merous; calyx tube densely pubescent, the teeth nearly glabrous; corolla campanulate-urceolate, 5.5 mm. long, glabrous; stamens 8 or 10, the filaments ciliate and pilose; anthers exaristate; tubules $1\frac{1}{2}$ times as long as the sacs; young fruit densely pilose.

⁴ Blake, *Rhodora* 17: 134. 1915.

Apparently erect; petioles pilosulous, about 2 mm. long; blades 3–10 mm. wide, obtuse or acutish, cuneate to rounded at base, marginate but not revolute, crenate-serrulate from near the base with 6–14 pairs of blunt, gland-tipped teeth, above dull green, puberulous along costa and when young sometimes on surface, beneath brownish, sparsely hirsutulous with dark hairs leaving little pits in falling, ciliolate toward base, the lateral veins about 3 pairs, impressed above and bluntly prominulous beneath or nearly obsolete on both surfaces; racemes several in the upper axils, about 7-flowered, the axis about 8 mm. long, pilosulous, the bracts suborbicular-ovate, obtuse, ciliolate, otherwise essentially glabrous, reddish, about 3 mm. long, deciduous; pedicels pilosulous, 2–4 mm. long, bearing 1–2 deciduous bractlets near base; calyx tube campanulate, 2.5 mm. long, densely griseous-pilosulous with spreading or ascending hairs, the limb 2 mm. long, the 4–5 teeth suborbicular-deltoid (1.2 mm. long), obtuse or acute, sparsely glandular-denticulate, reddish, nearly or quite glabrous; corolla (pink?) 4 mm. thick, the 4–5 deltoid, obtuse, recurved-spreading teeth 1 mm. long; stamens all alike and equal, 4.8 mm. long, the filaments distinct, ciliate, pilose within, sparsely so outside, 2.5 mm. long, the anther sacs finely muriculate, 1.2 mm. long, the 2 tubules distinct, cylindric, opening by terminal pores, 1.7 mm. long; ovary 4 or 5-celled, the cells without false partitions, the ovules numerous; style glabrous, barely exerted.

ECUADOR: Vicinity of Nabón, September 25, 1918, *J. N. Rose, A. Pachano, & G. Rose* 23017 in part (type no. 1,189,978, U. S. Nat. Herb.); vicinity of Tablón de Ona, September 27, 1918, *Rose, Pachano & Rose* 23082 in part.

Closely allied to *Vaccinium floribundum* H. B. K., in which the calyx is nearly or quite glabrous. *V. dasygynum* may prove to be only a form of that species, but seems distinct on the basis of the specimens examined. The specimens were mixed in one case with *Gaultheria reticulata* H. B. K., and in the other with *Vaccinium floribundum*.

Vaccinium retifolium Blake, sp. nov. Prostrate or reclining shrub. very leafy; stem and branches densely spreading-hirtellous; leaves short-petioled, elliptic, about 9 mm. long, acutish at each end, bluntly crenate-serrulate, veiny; flowers solitary, axillary, on pedicels 4–7 mm. long; calyx glabrous, 5-toothed; corolla broadly campanulate, 5-toothed, 7.5 mm. long and thick, glabrous throughout; stamens 12(?), all alike and equal, unappendaged; filaments distinct, hairy; anther sacs slightly longer than the tubules.

Stem branched, about 35 cm. long, rather slender; petioles 1–2 mm. long, densely hirtellous like the base of the costa; blades 7–11 mm. long, 3–4.5 mm. wide, short-ciliate toward base, otherwise glabrous, crenate-serrulate above the usually entire lower third with 3–8 pairs of obtuse, gland-tipped teeth, coriaceous, not revolute on margin, green and somewhat shining above, usually brownish or reddish beneath, feather-veined, the veins 4–5 pairs, anastomosing and usually forked toward apex, prominulous or impressed above, bluntly prominulous beneath; flowers few, solitary in the axils toward apex of stem; pedicels glabrous, somewhat thickened toward apex, bearing 2–5 ovate, acute or acuminate, coriaceous, glabrous bractlets about 1 mm. long; calyx 4 mm. long, the tube subglobose, 2 mm. long, equaling the limb, the teeth deltoid, acuminate, 1.5 mm. long, sometimes with a small glandular tooth on one side near middle; corolla thickish, the teeth slightly spreading at apex, suborbicular-deltoid, obtusish, 2 mm. long; stamens 4 mm. long,

the filaments lanceolate, 2.2 mm. long, densely hirsutulous dorsally and on margin, nearly glabrous inside, the anther sacs finely muriculate, 12 mm. long, the tubules distinct, cylindric, 1 mm. long; ovary 5-celled; style glabrous, 5 mm. long; berry globose, about 6 mm. thick, the seeds numerous in each cell.

ECUADOR: Vicinity of Portovelo, October 6-15, 1918, *J. N. Rose & G. Rose* 23387 (type no. 1,002,890, U. S. Nat. Herb.); Nabón, Sept. 25, 1918, *Rose, Pachano, & Rose* 22989.

A member of the section *Neurodesia*, allied to *Vaccinium reclinatum* Niedenzu (*V. reflexum* Hook. f., not Klotzsch) and much resembling the plate of that species, but with solitary flowers, longer corolla, and tubules nearly as long as the anther sacs. The single corolla examined had 11 stamens, with a space for a twelfth.

***Macleania euryphylla* Blake, sp. nov.** Leafy shrub; stem cinereous-pilousulous with curved mostly spreading hairs; petioles stout, about 5 mm. long; leaf blades broadly ovate, broadly rounded at apex, broadly rounded or slightly cordate at base, about 6 cm. long; racemes fasciculiform, the axis glabrous; calyx glabrous, about 6 mm. long; corolla glabrous throughout, 1.4 cm. long; filaments ciliate; tubules of the anthers 2, connate, equaling the sacs.

Stem stout, sulcate, glabrescent on the rounded angles; internodes about 2 cm. long; petioles curved-pilousulous, 4-7 mm. long; blades 4.3 to 6.3 cm. long, 2.5-5 cm. wide, strongly coriaceous, sparsely ciliolate at base or glabrous, sparsely impressed-punctate especially above, light green above, brownish beneath, not revolute on margin, featherveined (chief lateral veins 3 pairs) and loosely prominulous-reticulate beneath, the chief veins impressed above; racemes axillary, many-flowered, the axis stout, glabrous, about 5 mm. long, the bracts suborbicular, about 3 mm. long, ciliolate, nearly or quite glabrous dorsally; pedicels stout, glabrous, about 7 mm. long, jointed at apex, bearing 2 roundish ciliolate bractlets near base; calyx campanulate, 6-7 mm. long, about 6 mm. wide, the 5 acute teeth about 1 mm. high; corolla ovoid-tubular, fleshy, probably red, 5 mm. thick below, the 5 teeth ovate, obtuse or acutish, erectish, 1.5 mm. long; stamens 10, all alike, 8.5 mm. long, the filaments distinct, flat, pilose-ciliate especially above and sparsely pilose in front and back, 2.8 mm. long, the anther sacs oblong, strongly muriculate, 3.8-4 mm. long, the tubules connate to apex, 3.8-4 mm. long, opening by elongate slits; ovary 5-celled; style glabrous, 1.8 cm. long, exerted about 4 mm.

ECUADOR: Cusatagua, near Ambato, Prov. Tunguragua, March 1919, *A. Pachano* 179 (type no. 1,033,456, U. S. Nat. Herb.).

This species enters Horold's⁵ group II, A of *Macleania*. It is distinguished from most species of that group by its broadly ovate, round-tipped leaves, and from the others by characters of pubescence or dimensions. In leaves and inflorescence it is very similar to the figure of *M. cordata* Lem. (Fl. des Serres I. 4: 312. 1848), but that species is at once distinguished by having the corolla teeth pubescent inside. The vernacular name is given by the collector as "sagalita."

⁵ Bot. Jahrb. Engler 42: 269. 1909.

Forsteronia amblybasis Blake, sp. nov. Shrub or tree; branches and branchlets glabrous; leaves opposite; petioles 7–11 mm. long; leaf blades oval or elliptic-ovate, about 12 cm. long, short-pointed or subacuminate, rounded at base, glabrous except in the axils of the veins, pergamentaceous, the chief lateral veins 4–6 pairs; panicles puberulous, slender, the primary branches short, the flowers glomerate, subsessile; calyx eglandular, the sepals oblong, obtuse, 2 mm. long, finely ciliolate; corolla 3.5 mm. long, the lobes ovate-oblong, 2.2 mm. long, sparsely puberulous outside, densely pilose-barbate inside especially toward apex.

Branches and branchlets (the latter dull brown) conspicuously lenticellate; petioles slender, naked, glabrous or slightly puberulous; blades 9.5–13 cm. long, 3.5–6 cm. wide, mucronulate at the obtuse or acute apex, usually broadly rounded at base, dull or somewhat shining green above, brownish green especially along the nerves beneath, the costa and chief lateral veins impressed above, prominent beneath and with incomplete barbatulate cups in the axils, the veinlets prominulous above, scarcely so beneath; panicles terminal and in the upper axils, densely spreading-puberulous when young, sparsely so when old, the peduncle 1.4–4.5 cm. long, the axis 7–19 cm. long, the branches few, subopposite, 4.5 cm. long or less, the flowers collected in glomerules toward their tips, and at apex of panicle interrupted-glomerate, the glomerules 7–10 mm. thick; bracts oblong, about 3.5 mm. long, apiculate, ciliolate, otherwise nearly glabrous; pedicels puberulous, about 1.3 mm. long or less; sepals oblong or ovate-oblong, 2–2.2 mm. long, obtuse or acute, finely puberulous on middle of back or essentially glabrous except for the ciliolate margin; corolla campanulate, the 5 lobes suberect, the tube 1.3 mm. long, densely annulate-barbate inside near middle, the lobes obtuse; stamens 1.8 mm. long, the filaments about half as long as the anthers, the anthers glabrous outside, their tails thickened, truncate; nectary 5-lobed; ovaries hispidulous at apex.

BOLIVIA: Tipuani to Guanai, December 1892, *M. Bang* 1689 (type no. 1,167,408, U. S. Nat. Herb.); Polo-Polo near Coroico, North Yungas, altitude 1100 m., October–November 1912, *O. Buchtien* 3953.

Both these collections were distributed as *Forsteronia sellowii* Muell. Arg., to which species *F. amblybasis* seems to be nearest. In that South Brazilian plant, however, according to Mueller's description, the leaves are subacute at base and considerably smaller, the panicle is glabrous, the calyx and corolla are somewhat smaller, the corolla is fulvo-puberulous outside, its lobes are merely hispidulous inside, and the anthers are hispidulous on the back above.

Fischeria boliviana Blake, sp. nov. Vine, densely and finely glandular-hirtellous and rather densely spreading-hirsute; leaf blades oval-obovate, short-pointed, narrowly cordate at base, densely and finely pilosulous on both sides; peduncles mostly exceeding the leaves; flowers numerous, 1.8 cm. wide; sepals lanceolate, acuminate, puberulous and hirsute, about $\frac{3}{4}$ as long as the corolla; corolla lobes oblong-ovate, obtuse or acutish, pubescent on both sides, not distinctly ciliate, crisped on one side.

Stem and branches rather stout; leaves opposite; petioles pubescent like the stem, 1.5–2.2 cm. long; blades (only the upper seen) 5–6.5 cm. long, 3–3.8 cm. wide, abruptly short-pointed (the point about 2 mm. long), narrowly cordate at base (the sinus usually open, about 4 mm. deep), papery, above light green, densely and softly spreading-pilksulous (the hairs with barely enlarged base), beneath brownish green, similarly pubescent with shorter

hairs and along the veins sparsely hirsute, hirsute on margin, feather-veined, the lateral veins about 6 pairs; peduncles solitary, axillary, pubescent like the stem, 3-6 cm. long; inflorescences umbelliform or shortly racemose, similarly pubescent; pedicels 1.1-1.6 cm. long; buds apiculate; sepals 7 mm. long, 1.5-2 mm. wide below, reflexed; calycine glands small, easily deciduous; corolla deeply 5-parted, the lobes hispidulous-puberulous outside, hirsute-pilose inside except along the sulcate-plicate glabrous midline, 8 mm. long, 4.5 mm. wide; outer corona fleshy, adnate to base of corolla and to gynostegium, about $\frac{2}{3}$ as long as the latter; inner corona of 5 fleshy, oval, rounded lobes equaling the gynostegium, their inner margins prolonged into deltoid obtuse lobes applied to the apex of the disk of the gynostegium.

BOLIVIA: Beni River, July 1886, *Rusby* 936 (type no. 32499, U. S. Nat. Herb.).

Related to *Fischeria calycina* Decaisne, which is described as with peduncles equaling the leaves, and lanceolate attenuate merely puberulous corolla lobes; also related to *F. peruviana* Decaisne, which is said to have only a few scattered hairs on the inner surface of the corolla lobes, while those of *F. boliviana* are rather densely hirsute-pilose inside.

***Fischeria funebris* (Donn. Smith.) Blake.**

Fischeria martiana var. *funebris* Donn. Smith, Bot. Gaz. 24: 398. 1897.

Stem densely and minutely subglandular-puberulous and less densely spreading-hirsute; petioles similarly pubescent; leaf blades oval-ovate to obovate, usually rather long-acuminate, cordate at base, papery, densely hirsute-pilose or hirsutulous above (the hairs longer along the costa), beneath brownish, densely and rather softly hirsute-pilose or pilosulous (the hairs longer along the veins); peduncles longer than the leaves; inflorescences umbelliform, becoming short-racemose; pedicels 2-3.5 cm. long; buds very obtuse; sepals narrowly lance-subulate, attenuate, 9-15 mm. long, distinctly exceeding the corolla, puberulous and hirsute; calycine glands present; corolla about 1.8 cm. wide, deeply 5-lobed, fleshy, the lobes ovate, obtuse, strongly plicate-cripsed on one side, somewhat crisped toward apex on the other side, not sulcate-plicate along midline except at extreme base, hirsutulous on both surfaces except toward margin and apex; outer corona fleshy, subentire, about half as long as gynostegium; inner corona of 5 fleshy, obtuse lobes surpassing the gynostegium, their inner margins prolonged into suborbicular appressed lobes.

GUATEMALA: Between Sepacuité and Secanquim, Alta Verapaz, altitude 400 m., May 18, 1905, *Pittier* 311.

COSTA RICA: Hacienda Veyta, Río Volcán, Valley of Diguís, Feb. 12, 1898, *Pittier* 12065; Las Vueltas, Tucurrique, altitude 600-700 m., Jan. 1899, *Pittier* 13182; Finca de Chirripò, plains of Zent, altitude 200 m., Feb. 1900, *Pittier* 16054; Río Honda, altitude 50 m., Feb. 15, 1903, *Pittier*, 16641.

This plant is clearly a distinct species from the Brazilian *Fischeria martiana* Decaisne, which is described as having larger flowers, sepals equaling the corolla, acute buds, and a white corolla veined with green, its lobes sulcate-plicate along the midline. In *F. funebris* the corolla appears to be densely veined with dark on a light ground.